19980726.ba v02_n141.bam.980726

>From ???@??? Mon Jul 27 06:59:07 1998
Message-Id: <199807261915.OAA22161@sco.theporch.com>
Date: Sun, 26 Jul 1998 14:13:55 CDT
Subject: BOATANCHORS digest 2141

BOATANCHORS Digest 2141

Topics covered in this issue include:

1) Echophone - What am I missing?
   by "Larry Johnson" <k5yf@wt.net>
2) Re: Cost of a Crystal Soars!
   by Jerry Proc <jproc@idirect.com>
3) Dynamotor Model DM-40-A
   by PLT1032@aol.com
4) Re: Cost of a Crystal Soars!
   by "Arden Allen" <gumbear@pacbell.net>
5) 12K8 question
   by "Larry Johnson" <k5yf@wt.net>
6) Re: 12K8 question
   by Charles Ring <charlesr@infonline.net>
7) 5V4 rectifier replacement (1N1238)
   by DCrespy@aol.com
8) Re: Cost of Crystals
   by Jderm740@aol.com
9) Re: Gray Lady Upstairs
   by Jderm740@aol.com
10) Re: Green Memories
    by Jderm740@aol.com
11) BA PLLs, Was: Cost of a Crystal Soars!
    by "Roberta J. Barmore" <rbarmore@indy.net>
12) Re: BA PLLs, Was: Cost of a Crystal Soars!
    by "Mike B. Feher" <n4fs@monmouth.com>
13) due to cancer, selling my ba's
    by stevenn@ix.netcom.com (Steve M Fried)
14) Re: BA PLLs, Was: Cost of a Crystal Soars!
    by "Roberta J. Barmore" <rbarmore@indy.net>
15) Who needed the BC-1206 manual?
    by Tom Norris <badger@telalink.net>
16) Re: 12K8 question
    by ail0@lehigh.edu (ARTHUR I. LARKY)
17) crystal replacements for BA's
    by Brian.Harris@sv.sc.philips.com (Brian Harris)
18) Stancor Xfmr ID
    by Brian.Harris@sv.sc.philips.com (Brian Harris)
19) Re: More stuff

by "Larry Bearse" <lbearse@mail1.nai.net>
20) Re: Cost of a Crystal Soars!
by Jerry Proc <jproc@idirect.com>
21) Re: crystal replacements for BA's
by "Mike B. Feher" <n4fs@monmouth.com>

Message-ID: <000001bdb824$c3706b60$1a998bce@k5yf>
From: "Larry Johnson" <k5yf@wt.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Echophone - What am I missing?
Date: Sat, 25 Jul 1998 23:33:22 -0000
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Ok...I'm now the proud owner of an Echophone Commercial...cute little rig that fits in with the rest of my Hallicrafters collection. Looks good and surprisingly it works. But it does need a little work...caps for the heck of it, realignment, DeOxit, etc. But my question pertains to the way it was made and getting it out.

I'm very surprised at the construction of this. There are three slide switches mounted on the front with rivets (stby, bfo, and spkr/ph). I would judge by the way this appears to be made, a partially assembled chassis must have been mounted in the cabinet, leads soldered the switches, and assembly completed with the chassis in the cabinet. In any event, doesn't look like it's coming out w/o unsoldering the leads on the switches. And the BFO is going to be very difficult to get to. I want to get it out so I can polish the back of the bandspread cover and clean the dust of the dial. Even just to restring the dial (if that was necessary), it looks like this would have to be done.

I'm surprised Hallicrafters did this. It doesn't like this set was designed to be easily repaired. So...am I missing something here?

Larry Johnson, K5YF
Houston, Texas USA
e-mail: k5yf@wt.net

Message-ID: <35BA767C.2796F8FC@idirect.com>
Date: Sat, 25 Jul 1998 20:21:16 -0400
From: Jerry Proc <jproc@idirect.com>
MIME-Version: 1.0

To: Old Tube Radios <boatanchors@theporch.com>
CC: boatanchors@theporch.com
Subject: Re: Cost of a Crystal Soars!
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Benjamin D. Hall wrote:

> I'd almost bet that there is some sort of
> chip out there with the PLL circuitry on it, so that a solid state PLL
> crystal "replacement" should be cheaper than $60 Canadian,

Hi Ben,

This makes sense. Trying to locate a practical/useable circuit is an another problem.

> plus have the
> ability to have its frequency changed either on the fly, or via DIP switches.
>
> Does anyone out there know of such thing? If not, any of you Electrical
> Engineers want to take a stab at a circuit for such?
>
> Such a circuit would be great for getting crystal-less BA's back on the
> air, plus, we should probably prepare ourselves for the days when custom
> crystals are no more...
>
> 73,
> Ben
> ---
> Benjamin D. Hall, KD5BYB, Engine and radio collector / operator.
> Located in Houston, Texas, USA.
> e-mail: kd5byb@WT.net, web: ***down for refurbishment***
> "An ye harm none, do what ye will."

--

Regards,
Jerry Proc VE3FAB   jproc@idirect.com

Web: www3.sympatico.ca/hrc/haida
HMCS HAIDA Naval Museum, Toronto Ontario

From: PLT1032@aol.com
Message-ID: <2bd2bc22.35ba9e73@aol.com>
Date: Sat, 25 Jul 1998 23:11:45 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Dynamotor Model DM-40-A
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

Anyone have the specs. on a DM-40-A dynamotor?

Bob Lindgren

Message-Id: <199807260502.WAA20746@mail-gw6.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Cost of a Crystal Soars!
Date: Sat, 25 Jul 1998 22:04:04 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Yeah, well, the march of progress ya know......

Modern electronic equipment uses hybrid crystal oscillators for system clocks and frequency synthesizers. The quartz element is built in with the IC oscillator circuit. Product design engineers only have to specify a frequency and stick the part into their circuit board, modern design work is more like solving a crossword puzzle than understanding the physics of electronics.

Perhaps we have to swallow our pride and look for a practical and economical frequency synthesizer to supply the frequencies we need to run our vintage stations. Using a modern IC voltage controlled oscillator and cheap and plentiful logic and analog IC's a decent frequency synthesizer can be built for less than $100. Because many of my comrades in solder are not skillful in wiring up and debugging modern IC based designs a ready made circuit board ready for stuffing with parts is the only way to spread the benefit to all.

The trick is to find a practical design to adapt to BA exciter use (decent output level relatively free of harmonics), design a circuit board and collect enough in the kitty to get a bunch made at a reasonable cost each.

Say, $25 each for a good double sided plated through hole board. Coil winding can be left to the builder for simple solenoid and toroidal windings, off the shelf chokes for the rest. Exotic parts need not apply.

So let's see if we can get the ball rolling by asking for designs that are known to see what we have to work with. Lets call it the "BAthesizer Project". Post your info for all to ponder. Onward O' Cathodic Emissionaries!!

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

Message-ID: <002501bdb85e$3609f220$314ed6d0@k5yf>
From: "Larry Johnson" <k5yf@wt.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: 12K8 question
Date: Sun, 26 Jul 1998 06:25:39 -0000
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Playing around with this stupid little Echophone tonight, discovered it had a 12K8 tube, a type which I was not familar with. Looked it up, a triode oscillator + hexode mixer, primarily for ac/dc sets. Ok...no probs there. But then the book (RCA Rcving Tube Manual) states "Type 12K8 is primarily used for renewal purposes." I'm not familar with this term. Anyone care to explain what they mean by "renewal purposes". Or should I ask who or what are we renewing here?

Larry Johnson, K5YF
Houston, Texas USA
e-mail: k5yf@wt.net

Message-ID: <35BADB87.3361@infonline.net>
Date: Sun, 26 Jul 1998 03:32:23 -0400
From: Charles Ring <charlesr@infonline.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: 12K8 question
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Larry Johnson wrote:

>

> Playing around with this stupid little Echophone tonight, discovered it had
> a 12K8 tube, a type which I was not familar with. Looked it up, a triode
> oscillator + hexode mixer, primarily for ac/dc sets. Ok...no probs there.
> But then the book (RCA Rcving Tube Manual) states "Type 12K8 is primarily
> used for renewal purposes." I'm not familar with this term. Anyone care to
> explain what they mean by "renewal purposes". Or should I ask who or what
> are we renewing here?
>

It means that when your tube manual was published, that type tube was no longer being used in newly built equipment, but was still being made for replacement (renewal) purposes. My RC-14 manual, dated 1940, has full info on the 12K8, mostly referring to two full pages on the 6K8 and referring to the 12A8 for the filament and 6A8 for notes on the proper cathode connection.

73 de W3NU

From: DCrespy@aol.com
Message-ID: <d8c7590e.35bb3823@aol.com>
Date: Sun, 26 Jul 1998 10:07:29 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: 5V4 rectifier replacement (1N1238)
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

This part is the one SS of N sells to replace the 5V4/5Y3/5U4, and I think the one that was available from Dahl.

Does anyone have any experience using this part on a 51J series receiver without using an added dropping resistor. If you have, I'd be interested to know if you've had any reliability problems (especially the negative bias voltage divider; 3 big power resistors under the chassis, on the left side plate) or if the AGC action was affected by the higher voltages. Also, did you notice any significant change in transformer temperature?

(I am already up to speed on the general issues about higher voltage and HV on the plates before the tubes are warmed up. I am looking just for some feedback from current users of the solid state rectifiers.)

Thanks

Harry KG5LO

From: Jderm740@aol.com

Message-ID: <5f9a0d0b.35bb3895@aol.com>
Date: Sun, 26 Jul 1998 10:09:24 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Re: Cost of Crystals
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

Someone mentioned the possibility of a PLL. According to Markus there was an article in QST Jan 1972, pg 43-47, that may be what they are looking for.

Jack

From: Jderm740@aol.com
Message-ID: <b2455d34.35bb3887@aol.com>
Date: Sun, 26 Jul 1998 10:09:10 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: Re: Gray Lady Upstairs
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

I Got one of those up stairs too. She never stops. Yaa-Daa Yaa-Daa, all the time.
I got a chewing gum ear.

Jack

From: Jderm740@aol.com
Message-ID: <75aa8734.35bb38ad@aol.com>
Date: Sun, 26 Jul 1998 10:09:48 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Cc: arc5@ix.netcom.com
Mime-Version: 1.0
Subject: Re: Green Memories
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

To one and all
A few memories triggered by outside forces.

1) When I was young there were two major problems of life then. WWII and Puberty. I'm not sure which was worse. But now to the good part. I spent my Summer days at the beach until the afternoon when I had to do my paper route. There were all sorts of shortages especially bathing suits. For the boy it wasn't too bad, but the girls, they usually weren't able to buy new suits, so

when they grew the suits didn't. SIGH, DELIGHFUL.
There was a Juke Box there that played Tommy Dorsey's "Hawiian War Chant" almost constantly.
To this day I can't hear that record without smelling salt air and suntan lotion.
2) to the BA portion. As a teenager I had a tooth removed useing Gas. The smell was terrible and I felt very sick afterward.
Years later I bought a set of test leads from Allied, and when I opened the package,
THE SMELL WAS THE SAME and I got sick all over again. I had to throw them away. No matter how I tried I couldn't get that reaction out of may system.
Jack

Date: Sun, 26 Jul 1998 09:44:08 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: BA PLLs, Was: Cost of a Crystal Soars!
Message-ID: <Pine.SUN.3.96.980726090211.29958A-100000@indy3>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi!

There are a bunch of ways to do this. I'm going to mention a general bit of PLL lore, then wander off into a BA method.

First off, with any PLL, the "gotcha" is the loop filter. We take the VCO output, pass off a sample to a phase detector, hand our reference osc to the other input of the phase detector, *filter* the output of the phase detector, and use that to drive the control input of the VCO. (I have left out all the fancy frequency division and multiplication you apply to get a variable-frequency output, along with any modulation input to the VCO for FM). The loop filter controls capture time (how long it takes to lock up), stability, and has got to *ignore* any deliberate modulation (you look for variations of the VCO slower than the lowest modulating frequency--this implies the VCO needs to have of itself very good short-term stability, btw). Traditionally these are worked out by making a few good guesses followed by much cut-and-try. You *can* work 'em out neatly if you've been visited by The Calculus Pixies(*); one source of info from which to start is Horowitz and Hill's "The Art Of Electronics," which book I have plugged here before. Paul and Winfield know where all the mines were planted on the PLL battlefield and offer a good roadmap with the worst spots marked and tips on defusing. :)

Dig out yer good 'scope, if possible; the capture transient of a PLL is as distinctive as a fingerprint and if you're going to cut-and-hope the loop filter, you'll be able to gain a good feel for what does which by seeing how it battens down the VCO.

There *is* a "full BA" method, which showed up in the E&E "Radio Handbook" in the very late '30s or early '40s as an AFC for FM modulators. Low tube count.

Take a good ol' reactance-modulator setup; sample the output and use an off-the-shelf converter to knock it down to some handy freq--455 kc, 10.7 Mc, etc. Apply that "IF" to an ordinary discriminator, and use the (filtered) output as a DC control input to the reactance modulator. Hey, presto, the thing is as stable as your "reference" freq, which is the LO of the converter.

Now the OTs used a crystal for the LO...but a high-stability *variable* LC osc would do, too. The trick is getting your VCO sample to within 10.7 Mc or 455 kc of a range suited to a very stable LC osc; depending on the amount of multiplication used in the transmitter, this can be easy or a real pain. But it *can* be done, and you'd be the first on the block to have a vacuum-tube PLL! (This biz of fiddling with the ref/LO rather than shoveling bits in a rate multiplier makes it not-quite a PLL in modern terms as far as I can tell; but the heart of the device relies on the same notions). Will it have enough tunable range to be of use? Maybe; my first-guess notion is that the range cannot be wider than your IF, and even that might be a little much for a reactance modulator not followed by a lot of multiplication to get to the output freq. One could cheat with a varicap diode for greater voltage-controlled range; not as purely BAish but simpler.

73,
--Bobbi

(I'm not an engineer, never drove a train in my life. I'm an electronics technician, thankee very much, with genuine solder-splashes on my shoes. But "engineering" is really just the process of determining the information you need to do the job, and sitting down with it and slogging through the work of applying it! It's like scrubbing floors; there's no shortcut that is as effective as simply getting in there with soap and a brush and *doing* it...and it takes nothing but determination to do the job).

---

* Several of my EE & real genuine PE co-workers *swear* the calculus made no sense to them for months, and then one day the Calculus Pixies visited and it all clicked in. True? I dunno--not making much progress on my own (see above in re determination) but have not yet tried Hank van Cleef's sensible suggestion of going back to the source and seeing just what Sir Isaac Newton has to say. 'Spect Ike's got the straight skinny on it!

KB9GKX "RJ" rbarmore@indy.net   Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

Message-ID: <000801bdb8be$d8db7540$34f6face@n4fs>
From: "Mike B. Feher" <n4fs@monmouth.com>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Old Tube Radios" <boatanchors@theporch.com>
Subject: Re: BA PLLs, Was: Cost of a Crystal Soars!
Date: Sun, 26 Jul 1998 10:57:21 -0700
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Roberta makes a few good points about PLL's but what is the bottom line? The poor guy was just looking for a crystal or a replacement circuit. By the way close in phase noise is controlled by the reference oscillator of a PLL and modified or attenuated by the loop filter until the VCO phase noise takes over. If one needs real fast frequency agility then loop bandwidth has to be wide to allow for fast settling time, typically not a problem for ham use.
73 - Mike

Mike B. Feher, N4FS
89 Arnold Blvd.
Howell, NJ, 07731
732-901-9193

Date: Sun, 26 Jul 1998 10:06:35 -0500 (CDT)
Message-Id: <199807261506.KAA26201@dfw-ix16.ix.netcom.com>
From: stevenn@ix.netcom.com (Steve M Fried)
Subject: due to cancer, selling my ba's
To: Old Tube Radios <boatanchors@theporch.com>

I've got lymphoma cancer at long for this earth, thus selling all my ba
so my wife doesn't have to fool with the stuff.

want to sell in one big package and pick up only at 60193 schaumburg,
illinois

Hammarlund HQ120X, 129X, 140X, 150, SP400X.
Hammarlund speakers for 129X and 140X
All the above are in good to excellent shape and work.
I have a working extra "parts" sp400 for a spare with power supply.

EF Johnson Adventurer, Viking 1 with vfo, Viking Valient 1, Thunderbolt

EF Jonson TR switch
All Johnson equipment works fine. I have an extra "parts" viking 1 with all components and tubes.

Small bug collection of 17 Vibroplex, 2 EF Johnson types, 1 McElroy,
Paddles: brown brothers, fyo,
Keyers: TO Hallicrafters.

There is more but Im too tired to list it all.

Please reply by email
No tire kickers please, Im too tired to support someone who doesnt what what the equipment is. As you may know, cancer/chemo makes for a very worn out and tired person!

73 to all
Steve k2pts
schaumburg, il

Date: Sun, 26 Jul 1998 10:15:09 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: BA PLLs, Was: Cost of a Crystal Soars!
Message-ID: <Pine.SUN.3.96.980726101031.2482A-100000@indy3>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi, Gang!

Uh-oh, Mike's got me--the tube PLL is a "pet project" I will probably never get around to doing, so I tossed it out in hope that someone else would. ;)

In *many* cases, a high-stability LC osc can be used, though for land-mobile stuff it'd better be *awfully* stable. In a fixed station or abouad a ship at dock, one of the classic super-duper VFO circuits, constructed very (VERY!) solidly could be all you'd need. One might wish to use those three-legged sand things for the most rock-solid results if the ends cound more than the means.

73,
--Bobbi

KB9GKX "RJ" rbarmore@indy.net Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA

Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

Message-Id: <3.0.5.32.19980726102050.00870ae0@mail1.telalink.net>
Date: Sun, 26 Jul 1998 10:20:50 -0600
To: Old Tube Radios <boatanchors@theporch.com>
From: Tom Norris <badger@telalink.net>
Subject: Who needed the BC-1206 manual?
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Who was looking for the BC-1206 manual? I have one, fresly scanned in pdf format at ---

ftp://boatanchors:tubes@fernblatt.dynip.com/PDF_Manual_Project/BC1206/

Tom

Message-Id: <199807261617.MAA58460@ns2-1.CC.Lehigh.EDU>
Date: Sun, 26 Jul 1998 12:17:19 EDT
From: ail0@lehigh.edu (ARTHUR I. LARKY)
Subject: Re: 12K8 question
To: Old Tube Radios <boatanchors@theporch.com>

LARRY JOHNSON asks:
>But then the book (RCA Rcving Tube Manual) states "Type 12K8 is primarily
>used for renewal purposes." I'm not familar with this term. Anyone care to
>explain what they mean by "renewal purposes". Or should I ask who or what
>are we renewing here?

It means don't put it into a new design; they aren't going to make this one much longer. Either they have made a better one or the demand does not justify continuing to make it. Probably the latter.

Art K3HBA

Mime-Version: 1.0
Date: Sun, 26 Jul 1998 08:27:23 -0700
Message-ID: <00105CF3.1914@svlima.sv.sc.philips.com>
From: Brian.Harris@sv.sc.philips.com (Brian Harris)
Subject: crystal replacements for BA's
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part

Jerry Proc/Ben Hall (et al),

Indeed, outfitting our boatanchors with new crystals these days can cost more than buying a new solid state rig. Fortunately there are much cheaper (and fun) methods available.

I saw Art's comment concerning using a Signetics '562 as the basis of a synthesizer. Although not important, the company Signetics no longer exists. Our name was taken away about 5 years ago when Philips wanted to increase global recognition of the Philips name. Now we are just Philips Semiconductors. We don't make a '562. On the other hand, we do make an NE564N, which is a popular PLL (VCO and phase detector) that will operate up to 50 Mc if you a masochist. They are best not pushed past 40 Mc. Since most boatanchors with crystals have mixing or multiplying involved, this should not be a issue.

Yes, you can build a synthesizer easily with a reference oscillator, an NE564, a few counters (TTL or CMOS) and dip or thumbwheel switches. There are, however, other alternatives. Philips, and other manufacturers, have more highly integrated versions. These have the phase comparator, charge pump and divider circuitry integrated. The VCO is usually separate. Although most are designed to operate as high as 1-2 Gc., they can run at lower frequencies. Because of the trend to shrink ICs, these parts normally have a 2 or 3 wire serial interface which prevents using dip switches (parallel interface). A microcontroller or microprocessor typically handles the transmission of the serial data to the synthesizer. This can also be done via a pc parallel port, assuming you have the right program. We provide these programs for free.

I know of only two synthesizer ICs with parallel interface that are still being manufactured. They are the Philips TDD1742 and one from Motorola. I don't recall the Mot part number, but it is a better choice than our TDD1742. Although either of these parallel input synthesizers can be used to make a crystal substitute, I would opt for one of the parts with a serial interface part and an intelligent (pc or micro) interface. If you don't want a pc hanging off your SCR522 or GE Prog, we have a variety of 80C51-based microcontrollers available. The micro can also be used to drive an LED display or LCD for frequency readout. Yes, you will have to write and debug software and then program the micro.

Another solution requiring an intelligent interface is one that has been published in QST in the last year or so. It involves the use of DDS (Direct Digital Synthesis). This solution uses two chips, a DDS and a DAC (Digital to Analog Converter). The method is simple. The DDS outputs a continuous stream of parallel samples that represent the amplitude (in discrete steps) of a sine wave. These bits are presented to the DAC, which converts them to an analog signal that approximates a sine wave. The more samples that are presented within each period of the sine wave, the better the approximation. A filter is required at the output of DAC to help smooth the finite level transitions caused by digital sampling. Philips does not make DDS parts but Harris (no relation) does, along with a few other companies. Philips and other manufacturers supply the required DACs.

Information for our PLL's and DAC's is available on our website. It is: www.semiconductors.philips.com   Similary, Motorola and Harris have websites.

Should anyone choose to build a crystal replacement based on parts from Philips Semiconductors, I can be coerced into providing free samples and software on a limited basis.

73,

Brian Harris WA5UEK
Field Application Engineer
Philips Semiconductors
Richardson, Texas

Mime-Version: 1.0
Date: Sun, 26 Jul 1998 08:56:59 -0700
Message-ID: <00105CF4.1914@svlima.sv.sc.philips.com>
From: Brian.Harris@sv.sc.philips.com (Brian Harris)
Subject: Stancor Xfmr ID
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part

Need help to ID a Stancor A-3815. This is audio transformer is not listed in my only Stancor reference (Hamanual Third Edition). It has twelve leads (six out each hole) of various, but difficult to determine, color combinations.

Tnx es 73,

Brian WA5UEK

Message-Id: <199807261827.OAA09540@mail1.nai.net>
From: "Larry Bearse" <lbearse@mail1.nai.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: More stuff
Date: Sun, 26 Jul 1998 14:23:48 -0400
MIME-Version: 1.0

Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

> Also...an NIB UTC xfmr #LS-192. Does anyone have specs on the beastie? It
> has 17 terminals is 6X6X5 and weighs a bunch with no marks other than the
> model # on the tag and box. Thanks for any input!
>
>
>
>
> Ed Zeranski This is a private opinion or statement.
> home email: ezeran@cris.com
>

Hi Ed, the LS-192 is a power transformer according to the UTC 1954 Catalog B. It says typical application is power amplifier service, pri 105, 115 and 125 vac, secondaries 335-0-335 @180 MA DC, 60-0-60 @20 MA. Fil windings are 5V 3A, 6.3 VCT 0.75A, and 6.3 VCT 5.25A. Hope this helps. And no, still don't have the RAL-6 up and running yet!
..........Larry

Message-ID: <35BB7712.2ABAE47B@idirect.com>
Date: Sun, 26 Jul 1998 14:36:02 -0400
From: Jerry Proc <jproc@idirect.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Cost of a Crystal Soars!
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi Folks,

Thanks to everyone who submitted suggestions and solutions for "crystallizing" the SCR522. A few of you said that you might have crystals in your junk box therefore I would like to take you up on your offer. If cost was no object, then I would activate three channels:

Service	Frequency	Rx crystal	Tx crystal
Toronto Island Airport	118.2	8169.231 kHz *	---
Pearson International	119.12	8246.154 kHz	---
2 meter AM simplex	144.4	8275 kHz	8022 Khz

* This is the primary objective. (The numbers after the decimal are very

important. In this case, if the 231 Hz was not considered, I would miss the target station by 15 Khz).

>From the manual, the unit uses DC11A holders (pressure sensitive type) as standard. The '522 will also accept a smaller crystal whose specification in not listed. The case dimensions are 1.25" x 1.25" x 7/16" thick. Pin spacing is 0.5 "; pin diameter is 0.125".

Some folks suggested designing and building a synthesizer. For several reasons, this is not an option for me at this time although the idea is intruging..

-

Regards,
Jerry Proc VE3FAB   jproc@idirect.com
Web: www3.sympatico.ca/hrc/haida
HMCS HAIDA Naval Museum, Toronto Ontario

Message-ID: <002a01bdb8e3$1af08820$34f6face@n4fs>
From: "Mike B. Feher" <n4fs@monmouth.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: crystal replacements for BA's
Date: Sun, 26 Jul 1998 15:15:08 -0700
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Just a friendly jab at my friend Brian. Not really a jab but additional information. Of what value you decide. DDSs now come totally integrated, that is, all you put in is a parallel or serial frequency word and you get out a sine wave. The DAC is integrated and some of these run at clocks exceeding 2 GHz. Their phase noise is a direct function of the clock and get multiplied as 20*log N where N is the output multiplication factor or divisor. So in some cases they increase and in others they decrease. The major shortcoming of DDSs is spurious. That is undesired frequencies about the main carrier. These come about for various reasons some of which include the limited number of bits for within the accumulator and amplitude/phase within the ROM and DAC. The stability of a DDS is identical to that of the clock, in parts per million or whatever. Again for ham use the spurious are typically not a concern as typically their worst case amplitude is 6db per DAC bit below the main carrier. So if your DDS has 10 bits then you should not expect to see any spurious greater than 60 dBc below the carrier, and that is pretty far down. Running DDSs at higher output frequencies or closer to about 1/4 the clock frequency does result in less samples per period as Brian points out. This of course only has the consequences of less energy in the carrier and more in the harmonics which are easily filtered out. By the way a DDS with the capability I am talking about, and this is just the IC, will cost close to $1000 so not too practical for most BAs. I built my first discrete DDS over 25 years ago so if anyone has any questions about them I will gladly discuss it via private email. 73 - Mike

Mike B. Feher, N4FS
89 Arnold Blvd.
Howell, NJ, 07731
732-901-9193

>Another solution requiring an intelligent interface is one that has been published in QST in the last year or so. It involves the use of DDS (Direct Digital Synthesis). This solution uses two chips, a DDS and a DAC (Digital to Analog Converter). The method is simple. The DDS outputs a continuous stream of parallel samples that represent the amplitude (in discrete steps) of a sine wave. These bits are presented to the DAC, which converts them to an analog signal that approximates a sine wave. The more samples that are presented within each period of the sine wave, the better the approximation. A filter is required at the output of DAC to help smooth the finite level transitions caused by digital sampling. Philips does not make DDS parts but Harris (no relation) does, along with a few other companies. Philips and other manufacturers supply the required DACs.
>
>Information for our PLL's and DAC's is available on our website. It is: www.semiconductors.philips.com   Similary, Motorola and Harris have websites.
>
>Should anyone choose to build a crystal replacement based on parts from Philips Semiconductors, I can be coerced into providing free samples and software on a limited basis.
>
>73,
>
>Brian Harris WA5UEK
>Field Application Engineer
>Philips Semiconductors
>Richardson, Texas
>
>

End of BOATANCHORS Digest 2141
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